

AMENDMENTS TO THE CLAIMS

Claims 1-6 (Canceled).

7. (Currently amended) An ECR plasma source comprising:

a plasma generating chamber for generating a plasma using the electron cyclotron resonance (ECR) by microwaves and for drawing a plasma flow from an opening;

at least one magnetic generation means having magnetic coils wound for generating static magnetic fields in the plasma generating chamber; and

microwave introducing means for introducing the microwaves transmitted from microwave transmitting means, into the plasma generating chamber, wherein

the plasma generating chamber and the opening of the plasma generating chamber have generally rectangular sectional shapes normal to the direction of the plasma flow generated in the plasma generating chamber;

the magnetic coils of the magnetic generation means are wound in generally rectangular shapes in a plane normal to the direction of the plasma flow; and

the microwave introducing means includes a straight shape microwave cavity resonator which is terminated on one end portion of the straight shape microwave cavity resonator with a metal plate to form a terminal end portion having no opening, the other end portion of the straight shape microwave cavity resonator having a first opening formed by inserting a metal plate slit into the other end portion,

the straight shape microwave cavity resonator being disposed between a microwave source and the plasma generating member, and

between a terminal end portion having no opening and an end portion having a first opening disposed at a distance of $n \times (\lambda g/2)$ (n : an integer of 3 or more) from

the terminal end portion, and in the side of the straight shape microwave cavity resonator, first resonance units having a length $\lambda_g/2$ (λ_g : guide wavelength), but not having openings in a side, and second resonance units having a length of $\lambda_g/2$ and having at least one second opening in a side, are alternately arranged sequentially from the terminal end portion, two or more second resonance units being disposed in the straight shape microwave cavity resonator, so that microwaves in phase are introduced through the second opening into the plasma chamber.

8. (Previously Presented) An ECR plasma source as claimed in claim 7, wherein the microwave introducing means includes microwave branching means for branching and binding the microwaves transmitted from the microwave transmitting means.

9. (Previously Presented) An ECR plasma apparatus comprising the ECR plasma source as claimed in claim 8.

10. (Previously Presented) An ECR plasma apparatus as claimed in claim 9, comprising sample moving means; wherein a sample is irradiated at a generally rectangular area of a surface of the sample while being moved by the sample moving means.

11. (Previously Presented) An ECR plasma apparatus comprising the ECR plasma source as claimed in claim 7.

12. (Previously Presented) An ECR plasma apparatus as claimed in claim 11, comprising sample moving means; wherein a sample is irradiated at a generally rectangular area of a surface of the sample while being moved by the sample moving means.

13. (Previously Presented) An ECR plasma source as claimed in claim 7, wherein an opening is formed between the first resonance unit and the second resonance unit.